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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,637	08/23/2006	Caiteng Zhang	2467-2	2258

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EGBERT LAW OFFICES  
412 MAIN STREET, 7TH FLOOR  
HOUSTON, TX 77002

EXAMINER
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HEINCER, LIAM J

ART UNIT	PAPER NUMBER
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1767

MAIL DATE	DELIVERY MODE
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11/10/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,637	<b>Applicant(s)</b> ZHANG, CAITENG	
	<b>Examiner</b> LIAM HEINCER	<b>Art Unit</b> 1767	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 5) ☒ Claim(s) 73-103 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 73,74,76-78,81-83 and 101 is/are allowed.
- 7) ☒ Claim(s) 75,79,80,84-100,102 and 103 is/are rejected.
- 8) ☒ Claim(s) 76,96 and 97 is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 76, 96, and 97 are objected to because of the following informalities:

Claim 76 uses a semi-colon following the word comprising, rather than the colon used in the other claims of the claim set.

Claims 96 and 97 use the word “and” rather than commas between members of the list.

Claim 102 contains a typo such that it reads “comprising” rather than “comprises”.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 99 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 99 recites the limitation “an oil product having at least one solvent liquid”. There is no support in the original specification for the oil product as having at least one solvent liquid. The original specification discloses oil products, but is silent towards the solvent liquid..

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 75 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1767

Considering Claim 75: Claim 75 recites the limitation “the carbohydrate polymer having carbohydrate molecules having at least one non-saccharide bimolecule of monosaccharide derivatives”. Throughout the specification, carbohydrate polymers and bimolecules are presented as different embodiments. Further, a bimolecule has only two repeat units and therefore would not be considered a polymer by a person having ordinary skill in the art at the time of invention. Suggested language from the Office is, “further comprising carbohydrate molecules having at least one non-saccharide bimolecule of monosaccharide derivatives”.

Considering Claim 79: Claim 79 recites the limitation “the hydroxyl groups” in line 1. There is insufficient antecedent basis for this limitation in the claim.

Further, hydroxyl groups are defined structures, namely -OH. The members of the Markush group are compounds having hydroxyl groups rather than types of hydroxyl groups. Thus the claim as currently written does not make sense from a chemical perspective. Suggested language from the Office is, “further comprising a hydroxyl group containing compound selected from a group consisting of”.

Additionally, the claim uses limitations inside of parenthesis. It is not clear if the language inside the parenthesis is required by the claims. Since the language inside the parenthesis, “without a metal salt”, would contradict with the parent claim, which requires a metal salt, the language is being interpreted as not being required, and should be removed from the claim.

Considering Claim 80: Claim 80 presents a Markush group of the possible biological proteins. However, two of the members of the group, bacterium and a cell, are not proteins. Thus the claim does not make sense from a chemical perspective.

Considering Claim 100: Claim 100 sets forth a Markush group from which the “metal polymer chelates [are] selected from”. However, the list is not a group of metal polymer chelates, but a list of chemically distinct compounds from metal polymer chelates. For instance polylysine or aminosilanes are distinctly defined chemical structures that do not include chelated metals. As such, it is not at all clear what is being claimed. If the intention of the applicant is to claim the compounds be added to the metal polymer chelate, the suggested language from the Office would be “the metal polymer chelates being mixed with a compound from the group consisting of”.

Additionally, the claim recites an improper Markush group. A Markush claim contains an “improper Markush grouping” if: (1) The species of the Markush group do not share a “single

Art Unit: 1767

structural similarity,” 50 or (2) the species do not share a common use. Members of a Markush group share a “single structural similarity” when they belong to the same recognized physical or chemical class or to the same art-recognized class. See Federal Registrar Vol. 76(27), February 9, 2011, pg. 7166. The compounds listed cover a broad range of chemical classes and thus would not be considered to have a single structural similarity.

Considering Claim 102: Claim 102 recites the limitations “a monosaccharide having linear polymers”. A monosaccharide is by definition a compound having a single repeat unit (hence mono), and thus cannot contain a linear polymer. As such, the limitation does not make sense from a chemical perspective.

Considering Claim 103: The claim recites an improper Markush group. A Markush claim contains an “improper Markush grouping” if: (1) The species of the Markush group do not share a “single structural similarity,” 50 or (2) the species do not share a common use. Members of a Markush group share a “single structural similarity” when they belong to the same recognized physical or chemical class or to the same art-recognized class. See Federal Registrar Vol. 76(27), February 9, 2011, pg. 7166. The compounds listed cover a broad range of chemical classes and thus would not be considered to have a single structural similarity.

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the [fifth paragraph of 35 U.S.C. 112], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

Claims 84-99 are rejected under 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. Claims 84-99 recite applications where the metal-polymer chelates are used. The claims are set forth are claims to the metal polymer chelates rather than processes of use, but do not modify the metal polymer chelate's structure in any material way. As such, they do not further limit the structure of the metal polymer chelate. Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper

Art Unit: 1767

dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

Changing the language "is used" to "is capable of being used" would further limit the claims, as it would limit the scope to only those compositions that are capable of being used in the application, rather than the entire claim scope.

Claims 103 is rejected under 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. Claims 103 recite compounds that can be produced by the metal-polymer chelates. The claims are set forth are claims to the metal polymer chelates rather than processes of use, but do not modify the metal polymer chelate's structure in any material way. As such, they do not further limit the structure of the metal polymer chelate. Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

Changing the language "produce" to "is capable of producing" would further limit the claims, as it would limit the scope to only those compositions that are capable of being used in the application, rather than the entire claim scope.

#### ***Allowable Subject Matter***

Claims 73, 74, 76-78, 81-83, and 101 are allowed.

The reasons for allowability were presented in the previous action.

#### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIAM HEINCER whose telephone number is (571)270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1767

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Liam J Heincer/

Primary Examiner, Art Unit 1767

November 4, 2011